AMENDMENTS TO THE CLAIMS

1. (Currently amended) Sample device [[(1)]] suited to be inserted inside an external tube [[(10)]] with a radius r_{max}, comprising

a turntable [[(4)]] with a substantially circular plate [[(40)]] having a radius r_{table},

a rotator for rotating said turntable [[(4)]] around two substantially orthogonal axes [[(11, 12)]],

two substantially coaxial tubes [[(2, 3)]] including an inner tube and an outer tube, the turntable [[(4)]] being supported by the outer tube [[(3)]], and

two meshing gears [[(20, 30)]], the first gear [[(20)]] being connected to the inner tube [[(2)]] and the second gear [[(30)]] being connected to the turntable [[(4)]], the first gear [[(20)]] having a radius r_{gear1}, the second gear [[(30)]] having a radius r_{gear2} and the inner tube [[(2)]] having a radius $r_{inner\ tube}$ such that

$$r_{table} \leq r_{max}\text{-}d \sqrt{(1+\frac{1}{n^2})},$$

with d being the gear thickness and n being the gear transmission ratio.

2. (Currently amended) Sample device according to claim 1, ~~characterized by~~ further comprising at least one first cable guide [[(5)]] having a first end [[(51)]] connected to the turntable [[(4)]] and the second end [[(53)]] connected to a cable support.

3. (Currently amended) Sample device according to claim 2, ~~characterized in that~~ wherein the cable support is guided by the outer tube ~~and/or connected to at least one synchronizing means and/or at least one first driving unit~~.

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4. (Currently amended) Sample device [[(1)]] suited to be inserted inside an external tube [[(10)]] with a radius r_{max}, comprising

a turntable [[(4)]] with a substantially circular plate [[(40)]] having a radius r_{table},

a rotator for rotating said turntable [[(4)]] around two substantially orthogonal axes [[(11, 12)]],

at least one supporting means for supporting the turntable [[(4)]], and

at least one first cable guide [[(5)]] having a first end [[(51)]] connected to the turntable [[(4)]] and the second end [[(53)]] connected to a cable support, said cable support being connected to at least one first driving unit.

5. (Currently amended) Sample device according to claim 4, ~~characterized in that~~ wherein the supporting means comprises an outer tube [[(3)]].

6. (Currently amended) Sample device according to claim [[4 or]] 5, ~~characterized in that~~ further comprising an inner tube [[(2)]] that is coaxially arranged within the outer tube [[(3)]], ~~preferably~~ with at least one gear being arranged between the inner and the outer tube.

7. (Currently amended) Sample device according to claim 6, ~~characterized by~~ further comprising two meshing gears [[(20, 30)]], the first gear [[(20)]] being connected to the inner tube [[(2)]] and the second gear [[(30)]] being connected to the turntable [[(4)]], ~~preferably~~ the first gear [[(20)]] having a radius r_{gear1}, the second gear [[(30)]] having a radius r_{gear2} and the inner tube [[(2)]] having a radius $r_{inner\ tube}$ such that $r_{table} \leq r_{max}\text{-}d \sqrt{(1+\frac{1}{n^2})}$, with d being the gear thickness and n being the gear transmission ratio.

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8. (Currently amended) Sample device according to ~~one of the claims~~ claim 4 [[to 7]], ~~characterized in that~~ wherein the cable support is guided by the supporting means~~, in particular the outer tube, and/or connected to at least one synchronizing means~~.

9. (Currently amended) Sample device according to ~~one of the preceding claims, characterized in that~~ claim 1 or 7, wherein the gear thickness d is the thickness of the first or second gear~~, preferably corresponding~~ and corresponds to the thickness of the inner tube.

10. (Currently amended) Sample device according to ~~one of the preceding claims, characterized in that~~ claim 1 or 7, wherein the gear transmission ratio n corresponds to $r_{inner\ tube} / r_{gear}$, with $r_{gear} = r_{gear1}$ or r_{gear2}~~, preferably where $r_{gear1} = r_{gear2}$ and/or $r_{gear1} = r_{inner\ tube}$~~.

11. (Currently amended) Sample device according to ~~one of the claims 2 to 10, characterized in that~~ claim 2 or 4, wherein the first cable guide [[(5)]] comprises at least one first bellow [[(52)]] and/or spring~~, preferably~~ between the [[two]] first and second ends ~~(51, 53)~~, ~~in particular~~ and wherein the first end ~~(51) being~~ is arranged substantially perpendicular to the second end [[(53)]].

12. (Currently amended) Sample device according to claim 11, ~~characterized in that~~ wherein the first bellow and/or spring is guided by a support~~, preferably~~ connected with the outer tube.

13. (Currently amended) Sample device according to ~~one of the claims 2 to 12, characterized in that~~ claim 2 or 4, wherein the cable support is provided with at least one external second bellow and/or spring.

14. (Currently amended) Sample device according to ~~one of the preceding claims, characterized in that~~ claim 1 or 6, wherein the inner tube and/or the outer tube is/are connected to at least one second driving unit.

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15. (Currently amended) Sample device according to ~~one of the preceding claims, characterized in that~~ claim 2 or 6, wherein the rotator comprises the inner tube [[(2)]], the outer tube [[(3)]] and/or the cable guide [[(5)]] connected to at least one driving unit~~, in particular the first and/or second driving unit(s)~~.

16. (Currently amended) Sample device according to ~~one of the claims 3 to 15, characterized in that~~ claim 4, wherein the driving unit~~, in particular the first and/or second driving unit(s),~~ comprises at least one stepper engine and/or at least one worm wheel and/or at least one gear.

17. (Currently amended) Sample device according to ~~one of the preceding claims, characterized in that~~ claim 1 or 5, wherein the outer tube [[(3)]] is provided with at least one axial extension ~~(31a, 31b, 33)~~ for supporting the turntable [[(4)]].

18. (Currently amended) Sample device according to claim 17, ~~characterized in that~~ wherein the extension ~~(31a, 31b, 33)~~ is provided with at least one recess ~~(32, 34)~~ for carrying at least one first bearing ~~(62, 63) and/or the cable guide (5), the turntable (4), in particular a rotation pin (42, 43) connected to the substantially circular plate (40), and/or the cable guide (51, 52) is/are mounted within at least one first bearing (62, 63)~~.

19. (Currently amended) Sample device according to claim 17 ~~or 18, characterized in that~~, wherein the outer tube [[(3)]] is provided with two opposite extensions ~~(31a, 31b, 33)~~ for carrying at least two rotation pins ~~(42, 43)~~.

20. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 6, ~~characterized by~~ further comprising a second bearing [[(61)]] between the inner tube [[(2)]] and the outer tube [[(3)]].

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21. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 7, ~~characterized in that~~ wherein the first and second gears are formed as tooth or roll gears~~, and/or the first and second gears are formed as straight and/or conical gears~~.

22. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 7, ~~characterized in that~~ wherein the first gear [[(20)]] is machined on or mounted on the inner tube ~~(2), and/or the second gear (30) is machined on or mounted on the turntable (4), in particular a support (44) extending substantially perpendicular to the plate (40) and/or substantially coaxially to at least one rotation pin (42, 43)~~.

23. (Currently amended) Sample device according ~~to one of the preceding~~ claim 1 or 6, ~~characterized in that~~ wherein the inner tube is made from carbon fiber and/or provided with chrome plated teeth~~, and/or the turntable is made from carbon fiber and/or provided with chrome plated teeth~~.

24. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 7, ~~characterized in that~~ wherein the first and/or second gear is/are made of acethal.

25. (Currently amended) Sample device according to ~~one of the claims 9 to 24, characterized in that~~ claim 13, wherein the first and/or second bellow is/are made out of rubber~~, and/or the first and/or second spring is/are made out of non magnetic metal, preferably comprising copper, like copper beryllium, or plastic~~.

26. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 5, ~~characterized by~~ further comprising at least one thermal isolation layer between the external tube and the outer tube, the thermal isolation layer ~~preferably~~ being evacuated.

27. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 6, ~~characterized by~~ further comprising means for blowing ~~a gas, in particular~~

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conditioned air[[,]] into the external tube~~, preferably the gas~~ entering into the inner or outer tube and exiting the outer or inner tube.

28. (Currently amended) Sample device according to ~~one of the preceding claims, characterized by~~ claim 14, further comprising a control unit connected to the first and/or second driving unit.

29. (Currently amended) Sample device according to ~~one of the preceding claims, characterized in that~~ claim 28, further comprising at least one test object, at least one sample, at least one sensor, at least one mirror, at least one camera, at least one tool and/or at least one electronic device is/are~~, preferably~~ detachably[[,]] attached to ~~the turntable, in particular~~ at least one side of the substantially circular plate[[,]] and/or connected with the control unit.

30. (Currently amended) Sample device according to claim 28 [[or 29]], ~~characterized in that~~ wherein the control unit is arranged remote from the turntable, ~~preferably~~ and at least one cable~~, in particular~~ guided at least partially within the first cable guide~~, being~~ is provided between the control unit and the turntable.

31. (Currently amended) Sample device according to ~~one of the preceding claims, characterized by~~ claim 2 or 4, further comprising at least one second cable guide~~, preferably~~ connected to the second end of the first cable guide, ~~in particular~~ the second cable guide being substantially flat and/or flexible.

32. (Currently amended) Sample device according to ~~one of the claims 29 to 31, characterized in that~~ claim 29, wherein the sensor comprises at least one coil and/or at least one magnetic sensor~~, in particular~~ for providing a magnetic calibration device.

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33. (Currently amended) Sample device according to ~~one of the claims 29 to 32, characterized by~~ claim 29, further comprising a source for emitting~~, preferably~~ electromagnetic[[,]] radiation~~, in particular~~ comprising a laser and/or a visible light source.

34. (Currently amended) Sample device according to claim 33, ~~characterized in that~~ wherein the radiation is guided to ~~the turntable, in particular to~~ the mirror and/or camera~~, preferably~~ within the inner tube~~, in particular~~ via at least one glass and/or fiber-optic light guide or waveguide.

35. (Currently amended) Sample device according to ~~one of the preceding~~ claim 1 or 6~~, characterized in that the~~ wherein an amount of turns of the inner tube differs from [[the]] an amount of [[the]] turns of the outer tube by one turn within one ~~cycle, in particular~~ measuring or calibration cycle.

36. (New) Sample device according to claim 2, wherein the cable support is connected to at least one synchronizing means.

37. (New) Sample device according to claim 2, wherein the cable support is connected to at least one first driving unit.

38. (New) Sample device according to claim 37, wherein the driving unit comprises at least one stepper engine and/or at least one worm wheel and/or at least one gear.

39. (New) Sample device according to claim 4, wherein the cable support is connected to at least one synchronizing means.

40. (New) Sample device according to claim 10, wherein $r_{gear1} = r_{gear2}$ or $r_{gear1} = r_{inner\ tube}$.

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41. (New) Sample device according to claim 17, wherein the cable guide is mounted within at least one first bearing.

42. (New) Sample device according to claim 17, wherein a rotation pin connected to the substantially circular plate is mounted within at least one first bearing.

43. (New) Sample device according to claim 1 or 7, wherein the first and second gears are formed as straight and/or conical gears.

44. (New) Sample device according to claim 1 or 7, wherein the second gear is machined on or mounted on the turntable, in particular a support extending substantially perpendicular to the plate and/or substantially coaxially to at least one rotation pin.

45. (New) Sample device according claim 1 or 6, wherein the turntable is made from carbon fiber and/or provided with chrome plated teeth.

46. (New) Sample device according to claim 13, wherein the first and/or second spring is/are made out of non magnetic metal or plastic.

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